

Archives of Biochemistry and Biophysics

VOLUME 248

1986



ACADEMIC PRESS, INC.

Harcourt Brace Jovanovich, Publishers

San Diego Orlando New York Austin Boston
London Sydney Tokyo Toronto

Purification and Characterization of a Multifunctional Calmodulin-Dependent Protein Kinase from Canine Myocardial Cytosol <i>Takafumi Iwasa, Nobuhiro Inoue, Kohji Fukunaga, Toshiaki Isobe, Tsuneo Okuyama, and Eishichi Miyamoto</i>	21
Effect of Diabetic Ketosis on Jejunal Glutaminase <i>Laura E. Nagy and Norman Kretchmer</i>	80
Recovery of Isolated Rat Atrial Function Related to ATP under Different Anoxic Conditions <i>Fatemeh Savabi and Samuel P. Bessman</i>	151
Catalytic Transfer of Hydride Ions from NADPH to Oxygen by the Interconversions of Proline and Δ^1 -Pyrroline-5-carboxylate <i>Curt H. Hagedorn and James M. Phang</i>	166
Iron Requirement of <i>Rhizobium leguminosarum</i> and Secretion of Anthranilic Acid during Growth on an Iron-Deficient Medium <i>Clément R. Rioux, D. Carlyle Jordan, and James B. M. Rattray</i>	175
Anthranilate-Promoted Iron Uptake in <i>Rhizobium leguminosarum</i> <i>Clément R. Rioux, D. Carlyle Jordan, and James B. M. Rattray</i>	183
Effect of Insulin on the Metabolic Distribution of Carbons 1, 2, and 3 of Pyruvate <i>Chandra Mohan and Samuel P. Bessman</i>	190
^{31}P -NMR Studies of the Metabolisms of the Parasitic Helminths <i>Ascaris suum</i> and <i>Fasciola hepatica</i> <i>Susan Pietrzak Rohrer, Howard J. Saz, and Thomas Nowak</i>	200
An Examination of the <i>in Vivo</i> Distribution of Brain Hexokinase between the Cytosol and the Outer Mitochondrial Membrane <i>Harold T. Kyriazi and R. E. Basford</i>	253
Chemical Modification of Rabbit Skeletal Muscle Phosphorylase Kinase with Phenylglyoxal <i>Gopalan Soman and Donald J. Graves</i>	341

NUMBER 2, AUGUST 1, 1986

COMMUNICATIONS

Release of Iron from Ferritin by Cardiotoxic Anthracycline Antibiotics <i>Craig E. Thomas and Steven D. Aust</i>	684
Anticoagulant Active Heparin from Clam (<i>Mercenaria mercenaria</i>) <i>Robert E. Jordan and James A. Marcum</i>	690

BIOLOGICAL OXIDATIONS AND BIOENERGETICS

Effects of Arginine Modification on the Photocycle of Halorhodopsin <i>Masahiro Arika, Brigitte Schobert, and Janos K. Lanyi</i>	532
---	-----

ENZYME MECHANISMS AND METABOLISM AND COENZYMES

Effect of the Peroxisomal Proliferator Di(2-ethylhexyl)phthalate on Component Reactions of the Rat Hepatic Microsomal Fatty Acid Chain Elongation System and on other Hepatic Lipogenic Enzymes <i>M. Renuka Prasad and Dominick L. Cinti</i>	479
Three Diadenosine 5',5'''- P^1 , P^4 -Tetraphosphate Hydrolytic Enzymes from <i>Physarum polycephalum</i> with Differential Effects by Calcium: A Specific Dinucleoside Polyphosphate Pyrophosphohydrolase, a Nucleotide Pyrophosphatase, and a Phosphodiesterase <i>Angela K. Robinson and Larry D. Barnes</i>	502

Inhibition of Dextranucrase by Zn^{2+} , Ni^{2+} , Co^{2+} , and Tris(hydroxymethyl)-aminomethane (Tris)	<i>Arthur W. Miller and John F. Robyt</i>	579
Phosphorylation- and Ligand-Induced Conformational Changes of Rat Liver Fructose-1,6-bisphosphatase	<i>H. Vidal, B. Roux, and J. P. Riou</i>	604
Isopentenyl Pyrophosphate Isomerase:Dimethylallyl Pyrophosphate Isomerase: Isolation from <i>Claviceps</i> sp. SD 58 and Comparison to the Mammalian Enzyme	<i>E. Bruenger, L. Chayet, and H. C. Rilling</i>	620

GLYCOPROTEINS AND GLYCOLIPIDS

Separation and Partial Sequence Analysis of Blood Group A-Active Oligosaccharides by Affinity Chromatography Using Monoclonal Antibodies	<i>Jamal Dakour, Gunnar C. Hansson, Arne Lundblad, and David Zopf</i>	677
--	---	-----

HORMONE STRUCTURE AND FUNCTION

The Conformation of Monkey Pituitary Somatotropin	<i>Thomas A. Bewley and Choh Hao Li</i>	646
---	---	-----

MEMBRANES, CELL SURFACES, AND RECEPTORS

Binding and Internalization of Atrial Natriuretic Factor by High-Affinity Receptors in A10 Smooth Muscle Cells	<i>Mary A. Napier, Karen E. Arcuri, and Richard L. Vandlen</i>	516
--	--	-----

MOLECULAR BIOLOGY, GENE EXPRESSION, AND DEVELOPMENTAL BIOCHEMISTRY

Biosynthesis of 5-Methylaminomethyl-2-selenouridine, a Naturally Occurring Nucleoside in <i>Escherichia coli</i> tRNA	<i>Arthur J. Wittwer and Thressa C. Stadtman</i>	540
Insulin Enhances Transcription of the Tyrosine Aminotransferase Gene in Rat Liver	<i>Kai-Lin Lee, Kenneth R. Isham, Alfred Johnson, and Francis T. Kenney</i>	597
Analysis of the mRNA Coding for the Chick Vitamin D-Induced Calbindin and Its Regulation by 1,25-Dihydroxyvitamin D_3	<i>Michael W. King and Anthony W. Norman</i>	612

OXYGENASES, MICROSOMES, AND P-450 REACTIONS

The Role of Oxidative Processes in the Cytotoxicity of Substituted 1,4-Naphthoquinones in Isolated Hepatocytes	<i>David Ross, Hjordis Thor, Michael D. Threadgill, Martha S. Sandy, Martyn T. Smith, Peter Moldéus, and Sten Orrenius</i>	460
Alterations of Heme, Cytochrome P-450, and Steroid Metabolism by Mercury in Rat Adrenal	<i>James C. Veltman and Mahin D. Maines</i>	467
Interaction of Bovine Renal Mitochondrial Cytochrome P-450 with Antioxidants	<i>Joseph F. Crivello</i>	551
The Effect of Cytochrome P-450 and Reduced Glutathione on the ATP-Dependent Calcium Pump of Hepatic Microsomes from Male Rats	<i>Jargarlapudi S. Prasad, Richard R. Erickson, Daune L. Crankshaw, and Jordan L. Holtzman</i>	639
Age- and Sex-Related Expression of Cytochromes P450f and P450g in Rat Liver	<i>Stelvio Bandiera, Dene E. Ryan, Wayne Levin, and Paul E. Thomas</i>	658

PLANT MOLECULAR BIOLOGY, BIOCHEMISTRY, AND PHOTOSYNTHESIS

Quantitation of 2,5-Dibromo-3-methyl-6-isopropyl- <i>p</i> -benzoquinone Binding Sites in Chloroplast Membranes: Evidence for a Functional Dimer of the Cytochrome <i>b₆f</i> Complex	<i>Thomas Graan and Donald R. Ort</i>	445
Partial Purification of a Nucleoside Triphosphatase from the Inner Membrane of the Chloroplast Envelope of Pea	<i>Donald R. McCarty and Bruce R. Selman</i>	523
Purification and Properties of a Specific Isoflavone 7-O-Glucoside-6"-malonate Malonyltransferase from Roots of Chickpea (<i>Cicer arietinum</i> L.)	<i>Walter Hinderer, Johannes Köster, and Wolfgang Barz</i>	570
Light-Induced Increases in the Glycine Decarboxylase Multienzyme Complex from Pea Leaf Mitochondria	<i>Joan L. Walker and David J. Oliver</i>	626

PROTEIN TURNOVER, PROTEOLYSIS, AND POST-TRANSLATIONAL PROCESSING

<i>In Vitro</i> Deamidation of Human Triosephosphate Isomerase	<i>K. Ümit Yüksel and Robert W. Gracy</i>	452
<i>In Vivo</i> Metabolism of Inter- α -trypsin Inhibitor and Its Proteinase Complexes: Evidence for Proteinase Transfer to α_2 -Macroglobulin and α_1 -Proteinase Inhibitor	<i>Charlotte W. Pratt and Salvatore V. Pizzo</i>	587

REGULATION OF METABOLISM AND OF ENZYME ACTION

Activity of Maize Leaf Phosphoenolpyruvate Carboxylase in Relation to Tautomerization and Nonenzymatic Decarboxylation of Oxaloacetate	<i>Griffin H. Walker, Maurice S. B. Ku, and Gerald E. Edwards</i>	489
Glucose-Induced Phospholipid-Dependent Protein Phosphorylation in Neonatal Rat Islets	<i>Marjorie E. Dunlop and Richard G. Larkins</i>	562
Affinity Purification and Properties of Rat Liver Mitochondrial L-Alanine:4,5-Dioxovalerate Transaminase and Its Inhibition by Hemin	<i>J. Shanker and K. Datta</i>	652
AUTHOR INDEX FOR VOLUME 248		696

The Subject Index for Volume 248 will appear in the December 1986 issue as part of a cumulative index for the year 1986.

Instructions to Authors¹

Archives of Biochemistry and Biophysics is an international journal dedicated to the dissemination of fundamental knowledge in all areas of biochemistry and biophysics. **Short Communications** and **regular manuscripts** that contain new and significant information of general interest to workers in these fields are welcome. Sufficient detail must be included to enable others to repeat the work.

Short Communications offer a means of early publication of work of such importance that rapid publication is warranted. They should not exceed 15 double-spaced typed manuscript pages in length (including text, bibliography, tables, and figures). To expedite review and processing of communications, authors may send them directly to an Executive Editor most closely associated with the subject category of the communication. Communications sent to the Editorial Offices of the journal (see below) will be assigned to an Executive Editor.

Manuscripts should be written in clear, concise and grammatical English and should be submitted in quadruplicate (one original and three photocopies), including four sets of figures, to:

Archives of Biochemistry and Biophysics
Editorial Office
Seventh Floor
1250 Sixth Avenue
San Diego, California 92101

Failure to receive the required number of copies of the manuscript may delay review. All copies of halftone artwork *must* be glossy prints or originals; photocopies of halftones do not show sufficient detail to be used for the review process. *In the case of rejected manuscripts only one copy of the manuscript will be returned to the author.*

Original papers only will be considered. Manuscripts are accepted for review with the understanding that the same work has not been published, that it is not under consideration for publication elsewhere, and that its submission for publication has been approved by all of the authors and by the institution where the work was carried out. Abstracts of oral or poster presentations are not considered to constitute previous publication. Presentation of material in preliminary communications normally will not preclude publication of a full paper in *Archives*, provided that the full paper contains additional information that justifies its publication and does not repeat the presentation of the same data that supported the preliminary communication. The manuscript should be accompanied by copies of all preliminary communications and of all relevant manuscripts that are in press or under editorial consideration by another journal. Authors must verify the wording of any cited personal communication with the persons who supplied the information and obtain approval for the use of their names in connection with the quoted information or for the citation of unpublished work; written evidence of such approval should accompany the manuscript. All material published in *Archives* represents the opinions of the authors and should not be construed to reflect the opinions of the Editors or the Publisher.

Authors should suggest competent reviewers in their field and may also suggest individuals whom they wish to have excluded from the review process. The corresponding author will receive a decision letter from the Executive Editor. Revised manuscripts and correspondence concerning such manuscripts should be sent to the Executive Editor at the address indicated on the decision letter. Revised manuscripts should be accompanied by a copy of the unrevised version.

Many acceptable papers require minor revision or condensation. It is in the mutual interest of both the authors and the journal that amended manuscripts be returned promptly. A revised paper will retain its original date of receipt only if it is received by the Executive Editor within 2 months of the date of return to the author.

Authors submitting a manuscript do so on the understanding that if it is accepted for publication, copyright in the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the Publisher. The Publisher will not refuse any reasonable request by the author for permission to reproduce any of his or her contributions to the journal.

Communications offer a means of early publication of work of such importance that rapid release is warranted. Normally they should not exceed 15 manuscript pages in length (including text, bibliography, tables, and figures). The review and printing of such papers will be expedited to provide earliest possible publication.

Form of Manuscript. Manuscripts should be typewritten and double-spaced throughout on one side of 8.5 × 11-in. white paper, with 1-in. margins on all sides. All pages should be numbered consecutively.

Subject Areas. Authors should specify on page 1 of the manuscript the Subject Area of the article submitted. See the back cover for the listing of the Subject Areas.

Page 1 should contain the article title, author(s), affiliation(s), a short running title (abbreviated form of title) of less than 65 characters including letters and spaces, the appropriate subject category for listing in

¹ An extended Instructions to Authors is published in the January issue of *Archives of Biochemistry and Biophysics*. Reprints are available from the Editorial Office upon request. Authors should consult the extended Instructions for details on nomenclature, IUPAC-IUB rules and recommendations, and accepted abbreviations.

the Table of Contents, suggestions for index list entries, and the name and complete mailing address (and telephone number if possible) of the person to whom correspondence should be sent.

Page 2 should contain a short abstract of 50–250 words.

Editorial style should conform to the *Handbook for Authors* (American Chemical Society).

Footnotes to the text should be identified by superscript Arabic numerals and should be typed double-spaced on a separate sheet; footnotes to tables should be identified by superscript lowercase italic letters (^{a,b}, etc.) and placed at the bottom of the table.

Tables should be numbered with Roman numerals and cited consecutively in the text. Each table should be titled and typed double-spaced on a separate sheet. Units must be clearly indicated for each of the entries in the table.

Authors can submit complex tables and mathematical material as camera-ready copy. In this way, they are spared multiple, tedious proofreadings and the chance of error is reduced. Tables submitted as camera-ready copy should be typed single spaced whenever possible and preferably submitted as 5 × 7-in. glossy prints.

Figures should be cited consecutively in the text by Arabic numerals. Legends should be typed double-spaced on a separate sheet. All figures and illustrations are to be submitted in such form as to permit photographic reproduction without retouching or redrawing. Line drawings should be professionally drafted and no larger than 8.5 × 11 in. Letters and numbers should be at least $\frac{3}{16}$ in. (4 mm) in height (Leroy lettering size 200). Glossy prints of figures properly prepared are acceptable. Illustrations in color can be accepted only if the authors defray the cost.

References should be cited in the text by an Arabic numeral in parentheses and listed at the end of the paper in numerical order typed double-spaced on a separate sheet. Abbreviations of journal titles should conform to those of *Chemical Abstracts Service Source Index*, 1980. Please note the following examples.

1. JONES, J. B., DILWORTH, G. L., AND STADTMAN, T. C. (1979) *Arch. Biochem. Biophys.* **195**, 255–260.
2. METZLER, D. E. (1977) *Biochemistry: The Chemical Reaction of Living Cells*, p. 298, Academic Press, New York.
3. HARRINGTON, W. F. (1979) in *The Proteins* (Neurath, H., and Hill, R. L., eds.), Vol. 4, pp. 246–409, Academic Press, New York.

Miniprint supplements are an effective way of presenting supportive data. They are printed from plates made by photographic reduction from typed pages provided by the author. Types of data that have been published as miniprint supplements include analyses relevant to studies of amino acid or polynucleotide sequences, details of chemical syntheses, preparation of enzymes, extended statistical or mathematical discussions, and X-ray diffraction data. The miniprint supplement is published in the journal, immediately following the parent paper, and is included in the reprints. Since the miniprint supplement is produced from camera-ready copy supplied by the authors with no redaction or editorial changes it is important that the copy be letter perfect and conform to the style of the journal. *Authors will not be permitted to make changes to the miniprint supplement at the proof stage. Any changes necessary in the proof must be made as a typeset "Note added in proof."*

Proofs will be sent to the author, with a reprint order form. Authors will be charged for extensive alterations.

Reprints. Fifty reprints of each article will be provided free of charge. Additional reprints may be purchased.